Filing Date: July 30, 1997

Title: SELECTIVE SPACER TO PREVENT METAL OXIDE FORMATION DURING POLYCIDE REOXIDATION

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In the Claims

- 26. (Previously Presented) An electronic device comprising:
 - a first layer of oxide;
 - a feature over the first layer of oxide, the feature having a surface;
 - a boundary between the first layer of oxide and the feature; and
- a spacer comprising silicon nitride or an amorphous silicon film only on the surface of the feature.
- 27. (Previously Presented) The electronic device of claim 26 wherein the spacer is deposited on the surface of the feature extending to and terminating at the boundary.
- 28. (Previously Presented) The electronic device of claim 26 wherein:
 - the first layer of oxide comprises a layer of gate oxide;
- the feature comprises an electrode including polysilicon, a refractory metal, and a dielectric, or undoped silicon; and
 - the surface of the feature comprises sidewalls of the electrode.
- 36. (Previously Presented) An electronic device comprising:
 - a first layer of oxide;
 - an electrode on the first layer of oxide, the electrode having sidewalls; and
- a spacer comprising silicon nitride or an amorphous silicon film deposited only on the sidewalls of the electrode, the spacer extending to and terminating at a boundary between the first layer of oxide and the sidewalls of the electrode.

37.

(Currently Amended) The electronic device of claim 36 wherein:

the first layer of oxide comprises a layer of gate oxide; and

the electrode comprises polysilicon, a refractory metal, and a dielectric, or undoped silicon.

- 39. (Currently Amended) A semiconductor device, comprising:
 - a first layer of oxide;
- a feature protruding from the first layer of oxide and having sidewalls, the feature including:
 - a polysilicon portion;
 - a portion of conductive material deposited on the polysilicon portion; [[and]]
- a spacer comprising silicon nitride or an amorphous silicon film selectively deposited only on the sidewalls of the feature; and
- a second layer of oxide deposited on the semiconductor device, wherein the spacer is interposed between the second layer of oxide and the sidewalls of the feature.
- 40. (Previously Presented) The semiconductor device of claim 39, wherein the portion of conductive material comprises tungsten silicide.
- 41. (Currently Amended) A semiconductor device, comprising:
 - a first layer of oxide;
- a feature protruding from the first layer of oxide and having sidewalls, the feature comprising:

a layer of polysilicon;

one or more layers of conductive materials deposited on the layer of polysilicon, wherein at least one of the layers comprises tungsten silicide; [[and]]

a silicon nitride spacer selectively deposited only on the sidewalls of the

feature; and

a second layer of oxide deposited on the semiconductor device, wherein the silicon nitride spacer is interposed between the second layer of oxide and the sidewalls of the feature.

42. (Currently Amended) A gate electrode, comprising:

one or more layers of conductive materials etched to form a feature having sidewalls exposing the layers;

a selectively deposited spacer comprising silicon nitride or an amorphous silicon film, wherein the spacer is deposited only on the sidewalls of the feature; and a layer of oxide disposed over the gate electrode.

- 43. (Previously Presented) The gate electrode of claim 42, wherein the layers of conductive materials comprise tungsten silicide.
- 44. (Previously Presented) An electronic device comprising:

 a first layer of oxide;
 an electrode on the first layer of oxide, the electrode having sidewalls; and
 spacer means for protecting the electrode from a reoxidation, the spacer means

 comprising silicon nitride or an amorphous silicon film and being deposited on the sidewalls of the electrode and not on the first layer of oxide.
- 45. (Previously Presented) The semiconductor device of claim 41 wherein the feature further comprises a dielectric on the one or more layers of conductive materials.
- 46. (Previously Presented) The semiconductor device of claim 41 wherein the second layer of oxide comprises a smile effect at a boundary between the feature and the first layer of oxide.

- 51. (Previously Presented) An electronic device comprising:
 - a first layer of oxide;
- an electrode including polysilicon, a refractory metal, and a dielectric over the first layer of oxide, the electrode having sidewalls;
 - a boundary between the first layer of oxide and the electrode; and
- a spacer comprising silicon nitride or an amorphous silicon film only on the sidewalls of the electrode.
- 52. (Previously Presented) The electronic device of claim 51 wherein the spacer is deposited on the sidewalls of the electrode extending to and terminating at the boundary.
- 53. (Previously Presented) The electronic device of claim 51 wherein the first layer of oxide comprises a layer of gate oxide.
- 55. (Previously Presented) An electronic device comprising:
 - a first layer of oxide;
- an electrode comprising undoped silicon over the first layer of oxide, the electrode having sidewalls;
 - a boundary between the first layer of oxide and the electrode; and
- a spacer comprising silicon nitride or an amorphous silicon film only on the sidewalls of the electrode.
- 56. (Previously Presented) The electronic device of claim 55 wherein the spacer is deposited on the sidewalls of the electrode extending to and terminating at the boundary.
- 57. (Previously Presented) The electronic device of claim 55 wherein the first layer of oxide comprises a layer of gate oxide.

AMENDMENT UNDER 37 C.F.R. § 1.312

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58. (Previously Presented) The electronic device of claim 55, further comprising a second layer of oxide on the spacer and the first layer of oxide, the second layer of oxide comprising a smile effect at the boundary between the electrode and the first layer of oxide.

- 63. (Previously Presented) The semiconductor device of claim 39 wherein the feature further comprises a dielectric on the portion of conductive material.
- 65. (Previously Presented) The gate electrode of claim 42 wherein the feature includes polysilicon, a refractory metal, and a dielectric, or undoped silicon.